

## **Drought Status for May 2006**

*National Weather Service, Albuquerque, NM*

**Discussion:** April was another drier than normal month for New Mexico with the state receiving 47 percent of normal precipitation. Precipitation was actually near normal at some spots over the northern counties, mainly in a strip from Española to near Chama, over the Four Corners region around Farmington, along the Arizona border with Catron and Grant Counties, and over the Sacramento Mountains. However, for the rest of the state, precipitation was generally well-below normal. A good portion of southwest and central New Mexico received less than a tenth of an inch of moisture in April, and most of climate division 8 (Southwest Desert) didn't even collect measurable precipitation.

For the vast majority of New Mexico, April was the 6<sup>th</sup> consecutive month of extremely dry conditions, and for some locations, this has been the driest such period since record-keeping began. Table 1 shows some of the specific locations that have set records for the driest November through April on record.

<b>Location</b>	<b>Nov 2005-Apr 2006 Precipitation</b>	<b>Previous Record low amount</b>	<b>Year</b>
Alamogordo	0.48 inches	0.88 inches	1966-1967
Animas	0.41 inches	0.54 inches	1973-1974
Bernardo	0.10 inches	0.39 inches	1966-1967
Bosque del Apache	0.05 inches	0.08 inches	1973-1974
Capitan	0.66 inches	2.24 inches	1980-1981
Chaco Canyon	0.86 inches	0.97 inches	1975-1976
Cimarron	0.58 inches	1.09 inches	1935-1936
Carrizozo	0.58 inches	1.11 inches	1955-1956
Cloudcroft	2.86 inches	4.33 inches	1999-2000
Corona	0.47 inches	1.05 inches	1949-1950
El Rito	1.35 inches	1.90 inches	1999-2000
Gascon	1.54 inches	2.17 inches	1955-1956
Gila Hot Springs	1.12 inches	1.27 inches	1999-2000
Gran Quivira	0.27 inches	1.19 inches	1954-1955
Jemez Springs	1.00 inches	1.23 inches	2001-2002
Johnson Ranch	0.95 inches	1.32 inches	1971-1972
Las Cruces	0.22 inches	0.47 inches	1970-1971
Las Vegas Airport	0.46 inches	0.57 inches	1966-1967
Los Alamos	1.39 inches	2.16 inches	1970-1971
Moriarty	0.61 inches	0.73 inches	1955-1956
Pasamonte	0.36 inches	0.40 inches	1932-1933
Ramon	0.57 inches	0.71 inches	1969-1970
Ruidoso	1.56 inches	2.62 inches	1983-1984
Socorro	0.06 inches	0.37 inches	1966-1967
Springer	0.50 inches	0.75 inches	1949-1950
T or C	0.13 inches	0.47 inches	1954-1955

Table 1

Some other locations that did not set records for the driest November through April were close. Locations that experienced their 2<sup>nd</sup> driest November through April period included: Santa Fe (2<sup>nd</sup> of 133 years), Albuquerque (2<sup>nd</sup> of 113 years), Tularosa (2<sup>nd</sup> of 90 years), Abbott (2<sup>nd</sup> of 84 years), Augustine (2<sup>nd</sup> of 75 years), Ft. Sumner (2<sup>nd</sup> of 56 years), and Zuni (2<sup>nd</sup> of 55 years).

The water year (since October 1, 2005) and calendar year precipitation has averaged close to 50 percent of normal. However, a substantial portion of this precipitation fell in October, and much of the state has been extremely dry since that time.

The extremely dry conditions of the past six months coupled with longer-term (up to 72 months) dryness have produced a situation in which short and long-term drought has become established over New Mexico.

While short-term drought has become established over a good portion of the state, long-term drought lingers in three specific areas: (1) A 100-mile wide band from near Grants to Gallup, with the worst conditions in the Zuni area, (2) a 100-mile wide band from Las Vegas to Cuba, and (3) a 100-mile wide band from near Lincoln and Hondo to Truth or Consequences.

Table 2 shows the 6 month and 60 month precipitation totals compared to normal for some locations in New Mexico. Six month percentages 40 or less and 60 month percentages 80 or less are shown in **bold font**. Locations that are experience the worst short-term and long-term drought are also in **bold font**.

Location	Nov 2005 – Apr 2006 (6 month) Precipitation (inches)	Normal Nov-Apr	6 Month %Normal	May 2001 – Apr 2006 (60 month) Precipitation (inches)	Normal 60 Month Precipitation (inches)	Percent of Normal
Alamogordo	0.48	3.36	<b>14</b>	48.41	51.23	94
Albuquerque Airport	0.41	2.76	<b>15</b>	41.44	43.45	95
Albuquerque Valley	0.48	3.05	<b>16</b>	42.92	48.79	88
Albuquerque Foothills	1.34	5.16	<b>26</b>	65.58	77.00	85
Animas	0.41	3.39	<b>12</b>	44.87	54.60	82
Carlsbad	1.55	2.81	55	57.43	62.30	92
Chama	5.89	10.01	59	97.12	105.00	92
Clayton	1.44	3.43	42	75.22	77.50	97
Cloudcroft	2.86	7.80	<b>37</b>	125.88	124.80	101
Deming	0.62	2.72	<b>23</b>	38.37	46.00	83
Farmington.	1.87	3.75	50	37.55	43.35	87
Fence Lake	2.93	5.63	52	64.58	71.25	91
Ft. Sumner	0.62	3.47	<b>18</b>	68.08	72.30	94
Gallup	1.74	4.81	<b>36</b>	48.19	57.95	83
Gascon	1.54	7.62	<b>20</b>	112.29	119.25	94
Gila Hot Springs	1.12	5.62	<b>20</b>	65.41	81.70	<b>80</b>
<b>Grants</b>	1.12	3.15	<b>36</b>	40.82	53.00	<b>77</b>
<b>Jemez Spr.</b>	1.00	5.83	<b>17</b>	58.70	86.45	<b>68</b>
<b>Las Vegas</b>	0.46	3.33	<b>14</b>	75.90	95.20	<b>80</b>
<b>Los Alamos</b>	1.39	5.23	<b>27</b>	72.09	91.65	<b>79</b>
Raton	1.03	4.35	<b>24</b>	80.30	88.30	91
Red River	7.33	8.09	91	107.31	102.65	105
Roswell	0.51	3.09	<b>17</b>	53.24	64.65	82
Ruidoso	1.56	6.70	<b>23</b>	91.59	109.25	84
<b>Santa Fe</b>	0.91	4.36	<b>21</b>	51.75	68.50	<b>76</b>
Socorro	0.06	2.77	<b>02</b>	43.12	48.00	90
Tatum	2.31	3.07	75	81.20	79.70	102
<b>T or C</b>	0.13	3.41	<b>04</b>	36.23	60.40	<b>60</b>
Tucumcari	0.99	3.87	<b>26</b>	85.10	79.75	107
Zuni	1.78	4.76	<b>37</b>	45.07	61.00	<b>74</b>

Table 2

Another way to assess the long-term drought is to look at the percentiles for longer times scale. In general, percentiles provide a good measure of how rare conditions are. Percentiles greater than 50 indicate the area has been wetter than average. Drought is associated with the lower percentiles. Percentiles less than the 11<sup>th</sup> are usually associated with “Emergency” designations in New Mexico. Percentiles from 11<sup>th</sup> to 20<sup>th</sup> are consistent with drought “warning” designations. The 21<sup>st</sup> to 30<sup>th</sup> percentiles are associated with drought “alerts,” and the 31<sup>st</sup> to 40<sup>th</sup> percentiles are consistent with “heads up” advisories. Table 3 shows the 6

month and 60 month period percentile averages for the eight climate divisions in New Mexico. Values at or below the 20<sup>th</sup> percentile are shown in **bold figures**. When considering the climate divisions, it's apparent from table 3 that all sections of the state are experiencing significant short-term drought. The worst short-term conditions are in climate divisions 5, 6 and 8 (Central Valley, Central Highlands, and Southwest Desert). All three of those climate divisions have experience six month (November-April) precipitation deficiencies at or near record lows.

Long-term drought is especially apparent in climate divisions 2 (Northern Mountains) and 6 (Central Highlands). These regions include the northern mountains of New Mexico, as well as the central highlands, from just east of the Sandia Mountains southward into the Capitan and Sacramento Mountains. Some caution is advised here, since the average condition for a climate division does not represent a single location, and conditions can vary considerably throughout a climate division. For example, although the 6-month precipitation percentile average is the 6<sup>th</sup> percentile in climate division 2 (Northern Mountains), the percentile at specific locations ranges from the 2<sup>nd</sup> at Jemez Springs, Los Alamos and Santa Fe to 34<sup>th</sup> at Red River.

Climate Division	Short-Term Precipitation Departure and Percentile (6 month period)	Long-Term Precipitation Departure and Percentile (60 month period)
Northwest Plateau (1)	-1.9 inches <b>11<sup>th</sup> percentile</b>	-3.9 inches 31 <sup>st</sup> percentile
Northern Mountains (2)	-2.5 inches <b>6<sup>th</sup> percentile</b>	-10.4 inches <b>8<sup>th</sup> percentile</b>
Northeast Highlands (3)	-2.0 inches <b>8<sup>th</sup> percentile</b>	-1.4 inches 45 <sup>th</sup> percentile
Southwest Mountains (4)	-2.4 inches <b>4<sup>th</sup> percentile</b>	-2.2 inches 38 <sup>th</sup> percentile
Central Valleys (5)	-2.2 inches <b>1<sup>st</sup> percentile</b>	-1.2 inches 42 <sup>nd</sup> percentile
Central Highlands (6)	-4.3 inches <b>1<sup>st</sup> percentile</b>	-10.7 inches <b>10<sup>th</sup> percentile</b>
Southeast Plains (7)	-1.7 inches <b>12<sup>th</sup> percentile</b>	-1.2 inches 43 <sup>rd</sup> percentile
Southern Desert (8)	-2.6 inches <b>2<sup>nd</sup> percentile</b>	-5.4 inches 24 <sup>th</sup> percentile

Table 3



Climate Divisions in New Mexico (Fig 1)

Figures 2, 3 and 4 show the 6 month, and 60 month precipitation percentiles in New Mexico, as well as a 70/30 blend of the two. The purpose here is to show the worst of the short-term (up to 12 months) conditions, the worst of the long-term (greater than 12 months up to 72 months) conditions, and an average of the two putting more emphasis on the significance of the exceptionally dry November through April period. The cool-season is especially important in New Mexico, as snow pack provides well over 50 percent of the state's surface water supply. How to appropriately combine the results of precipitation over different time scales to present a drought assessment with one or two maps is always a considerable challenge.

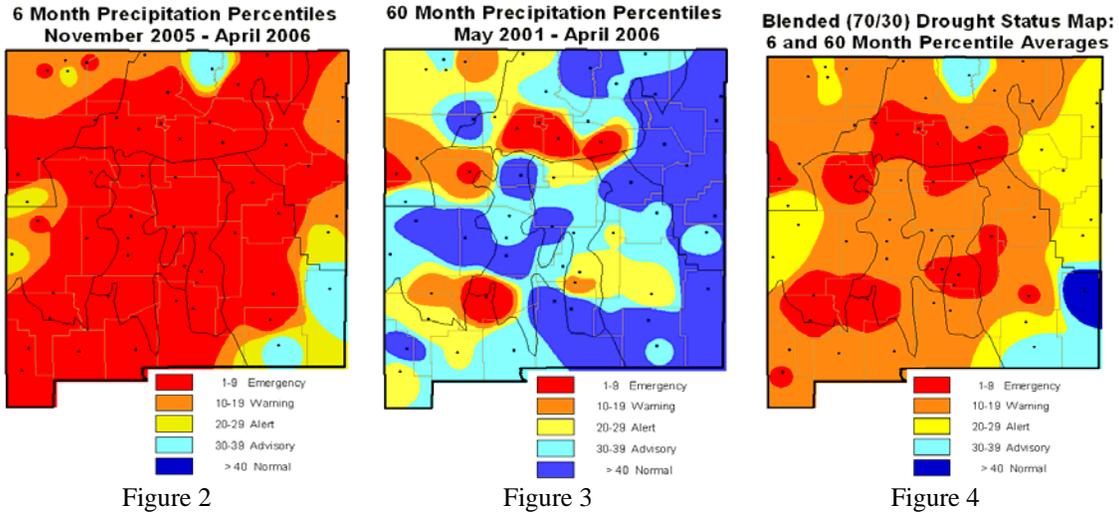


Table 4 shows the state of the high level snow pack in early May, 2006, for the main river basins in New Mexico and southern Colorado that impact New Mexico. Only locations are listed for which some snow is still present. Most of the lower elevation basins finished the snow melt process for the season. These data are from the SNOTEL instrument platforms operated by the Natural Resource Conservation Service (NRCS).

River Basin	Snow Water Equivalent % Normal for Early May 2006
Rio Chama	49
Upper Rio Grande	54
San Juan	53
Animas	50
Sangre de Cristo	04

Table 4

**Rangeland/Pasture conditions:** In mid May, soil moisture was considered short or very short over 92 percent of the state, with only 8 percent adequate. Last year at this time, soil moisture was adequate or surplus over 68 percent of the state, and short or very short over only 32 percent of the area. As of mid-May, only 10 percent of the range and pasture land in New Mexico was considered to be in good condition, with 62 percent of the land in poor or very poor condition. This is a very significant change from one year ago, when only 11 percent of the range and pasture land was considered to be in poor or very poor condition. Ninety-seven percent of the winter wheat was considered to be in poor or very poor condition. Windier than normal conditions over the winter and spring have led to increased evaporation and increased loss of soils.

**Fire Danger Impacts:** Fire danger is high to extreme over most of New Mexico. So far in 2006, fires have burned well over 200,000 acres of land, mostly grassland. Lightning from relatively-dry thunderstorms will increase over late May and June. Fire starts will progress into the higher elevations and forests during this period. Fire danger should begin to diminish in July once thunderstorm season has developed and become established to the point of reducing fire danger.

**Hydrologic Impacts:** Because of the wet period in 2004 and early 2005, New Mexico reservoir storage is substantially better than last year at this time over most of the state. As of early May, storage in most of the systems near the Colorado border was above normal. This includes Abiquiu, Costilla and Navajo. In the east, storage in Santa Rosa Reservoir was still near normal. In the southeast, Brantley was near normal. All other major storage systems in the central and southern portions of New Mexico were below normal.

Storage in Elephant Butte was roughly twice the volume of early 2005, but still only about 35 percent of normal.

The snow melt runoff is well underway, and peak flows for streams that depend on snow melt from all but the higher peaks have already passed. Total snow melt runoff volume will range from generally 50 to 70 percent over northwest New Mexico (San Juan and Animas Basins) to less than 50 percent nearly everywhere else. Most of the snow melt volume over southern New Mexico will be less than 20 percent of normal. Runoff in the Pecos and Canadian Basins is likely to be at or near the lowest of record.

Unless an unforeseen wet period emerges, reservoir storage is very likely to exhibit a downward trend in 2006. Storage at Elephant Butte will likely dip to somewhere around 5 to 8 percent of the 30-year normal by late summer, and could drop to the lowest level since late 1971.

**Long-range outlook:**

The La Niña event that impacted New Mexico over the autumn and winter of 2005-2006 has essentially disappeared. New Mexico will likely continue to experience above-normal temperatures through at least June, with precipitation normal to below normal. Through June, the best chance for normal precipitation will be over the eastern half of the state, where episodes of thunderstorms will be more frequent.

Average summer precipitation for the 10 leanest snow pack years since 1950 has been 110 percent of normal, ranging from 116 percent of normal in the southwest to 106 percent of normal in the northeast. However, the last two poor snow pack seasons (2000 and 2002) were followed by normal to below normal precipitation. The lean snow pack might favor a wetter than normal summer, while the trends of recent summers might favor a drier than normal summer. At this time, the most likely scenario for precipitation for the June through August period is for precipitation to be close to normal. It would not be unusual for the result to depend on whether or not one or two tropical systems from either the Pacific or Atlantic impact the state.

**Calendar Year 2006 and Water Year 2006 (Oct thru Apr) Precipitation for New Mexico**

National Weather Service Albuquerque, NM

<u>Location</u>	<b>2006 (Jan - Apr)</b>			<b>Water Year 2006 (Oct 05 through Apr 06)</b>			
	<u>Obs</u>	<u>Normal</u>	<u>%Normal</u>	<u>Obs</u>	<u>Normal</u>	<u>% Normal</u>	<u>SID</u>
<b><i>Northwest Plateau</i></b>							
AZTEC RUINS N/M	2.19	2.99	73%	4.80	5.60	86%	AZT
FENCE LAKE	2.38	3.70	64%	3.29	6.95	47%	FCK
FARMINGTON AG CTR	1.73	2.46	70%	2.81	4.68	60%	FAR
GALLUP FAA APRT	1.29	3.08	42%	1.73	5.86	30%	GUP
LINDRITH 2SE	1.96	3.90	50%	4.43	7.11	62%	LDR
NAVAJO DAM	2.79	4.19	67%	6.14	7.79	79%	BLN
<b><i>Northern Mountains</i></b>							
ALCALDE	0.81	1.73	47%	1.79	3.83	47%	ALC
CANJILON R/S	2.45	4.13	59%	5.00	7.30	68%	CJL
CERRO	2.76	2.77	100%	5.61	5.25	107%	CRR
CHAMA	5.15	6.88	75%	8.52	11.72	73%	CHM
CIMARRON 4SW	0.46	3.04	15%	1.56	5.20	30%	CPS
GHOST RANCH	1.29	2.67	48%	3.03	4.84	63%	AIQ
JEMEZ SPRINGS	0.77	3.95	19%	1.63	7.41	22%	JEM
JOHNSON RANCH	0.82	2.60	32%	1.48	5.00	30%	CUB
LAS VEGAS FAA APRT	0.29	2.22	13%	1.11	4.54	24%	LVS

LOS ALAMOS	1.31	3.50	37%	2.50	6.74	37%	LOA
RATON FILTER PLT	0.87	3.10	28%	2.41	5.49	44%	RRT
RED RIVER	6.27	5.76	109%	10.08	9.59	105%	RED
SANTA FE 2	0.64	2.82	23%	2.27	5.56	41%	STF
WOLF CANYON	3.70	6.58	56%	5.46	11.55	47%	CUA
<b><i>Northeastern Plains</i></b>							
CLAYTON APRT	1.07	2.57	42%	1.64	4.53	36%	CAO
CLOVIS	1.80	2.53	71%	3.39	5.43	62%	CLV
CONCHAS DAM	0.71	2.24	32%	1.08	4.28	25%	CNC
MOSQUERO 1NE	0.57	2.34	24%	1.25	4.49	28%	MSQ
PORTALES	1.86	2.19	85%	3.25	4.73	69%	POR
TUCUMCARI 4NE	0.99	2.64	38%	1.55	5.12	30%	TUC
<b><i>Southwestern Mountains</i></b>							
FORT BAYARD	0.63	2.83	22%	2.74	5.92	46%	FTB
GILA HOT SPRINGS	1.06	3.22	33%	3.22	7.19	45%	GHS
GRANTS APRT	0.97	1.93	50%	1.56	4.29	36%	GNT
QUEMADO ESTATES	1.52	2.95	52%	2.65	5.60	47%	QME
RESERVE R/S	1.94	3.45	56%	3.00	7.57	40%	RES
<b><i>Central Valley</i></b>							
ABQ WSFO APRT	0.31	1.83	17%	1.44	3.66	39%	ABQ
BOSQUE DEL APACHE	0.05	1.32	4%	1.55	3.22	48%	SAA
LOS LUNAS 3SSW	0.36	1.62	22%	1.58	3.69	43%	LLU
SOCORRO	0.06	1.77	3%	1.10	3.78	29%	SCR
<b><i>Central Highlands</i></b>							
CAPITAN	0.45	2.80	16%	2.58	5.03	51%	CAP
CLOUDCROFT	2.39	5.17	46%	4.59	9.42	49%	CLD
ESTANCIA 4N	0.79	2.31	34%	2.29	4.73	48%	EST
MOUNTAINAIR R/S	0.32	2.99	11%	1.67	5.74	29%	MTN
RUIDOSO 2NNE	1.84	4.23	43%	5.00	8.25	61%	RUP
<b><i>Southeastern Plains</i></b>							
ARTESIA 6S	0.74	1.83	40%	1.57	3.93	40%	ART
CARLSBAD	1.55	1.80	86%	2.58	4.15	62%	CWP
FORT SUMNER	0.61	2.27	27%	1.45	4.82	30%	FSM
ROSWELL CLIMAT	0.51	1.99	26%	1.80	4.28	42%	ROW
SANTA ROSA	0.71	2.20	32%	1.23	4.48	27%	SNR
TATUM	2.29	2.03	113%	3.91	4.57	86%	TAT
<b><i>Southern Desert</i></b>							
ANIMAS	0.38	1.90	20%	2.31	4.36	53%	ANM
DEMING	0.57	1.57	36%	1.66	3.49	48%	DEM
FAYWOOD	0.48	1.89	25%	1.93	4.64	42%	FAY
STATE U LAS CRUCES	0.22	1.29	17%	1.79	3.38	53%	STC
TRUTH OR CONSEQ	0.13	1.41	9%	1.45	4.73	31%	TRC
TULAROSA	0.28	1.78	16%	1.51	3.85	39%	TLR

<b><u>Climate Division</u></b>	<b>2006 (Jan - Apr)</b>	<b>Water Year 2006 (Oct 05 through Apr 06)</b>
	<b><u>% NrmI</u></b>	<b><u>% NrmI</u></b>
Northwest Plateau	61%	61%
Northern Mountains	53%	56%
Northeastern Plains	48%	43%
Southwestern Mountains	43%	43%
Central Valley	12%	40%
Central Highlands	33%	49%
Southeastern Plains	53%	48%
Southern Desert	21%	44%
All Divisions	46%	50%